

## **ORDINANCE NO. 11-005**

**AN ORDINANCE OF THE COUNTY OF ORANGE, CALIFORNIA REPEALING THE CALIFORNIA FIRE CODE, 2007 EDITION ORDINANCE 08-009 AND ADOPTING BY REFERENCE THE CALIFORNIA FIRE CODE, 2010 EDITION WITH APPENDIX B, BB, C, CC AND AMENDMENTS THERETO.**

### **FIRE CODE**

#### **Section 3-3-1. Fire Code Adopted**

The 2010 California Fire Code, based on the International Fire Code, 2009 Edition, with errata, published by International Code Council (ICC), and the whole thereof, including Appendix B, Appendix BB, Appendix C, Appendix CC, are hereby adopted by the County of Orange for the purpose of prescribing regulations governing conditions hazardous to the life and property from fire and explosion, save and except such portions as are hereinafter added, deleted, modified or amendment. One copy of all the above is now on file in the office of the Clerk for public inspection and is adopted with the same force and effect as through set out herein in full.

#### **Section 3-3-2 Enforcement and Inspection**

The California Fire Code with amendments shall be enforced by the Orange County Fire Authority, which shall be operated under the Fire Chief of the Orange County Fire Authority. The Fire Chief of the Orange County Fire Authority may detail such members of the fire authority as inspectors as shall be necessary from time to time.

#### **Section 3-3-3 Scope and Administration**

**Chapter 1 Scope and Administration** is adopted in its entirety with the following amendments:

**Section 105.6.29 Miscellaneous Combustible Storage** is hereby revised as follows:

**105.6.29. Miscellaneous Combustible Storage.** An operational permit is required to store in any building or upon any premises in excess of 2500 cubic feet (71 m<sup>3</sup>) gross volume of combustible empty packing cases, boxes, barrels or similar containers, rubber tires, rubber, cork, green waste, composting, yard waste, or similar combustible material.

**Section 105.6.35 Private fire hydrants** is hereby deleted without replacement.

**Section 109.3 Violation penalties** is hereby revised as follows: Infraction, Misdemeanor, as follows:

**109.3 Violation penalties.** Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of either a misdemeanor, infraction or both as prescribed in Section 109.3.2 and 109.3.3 Penalties shall be as prescribed in local ordinance Each day that a violation continues after due notice has been served shall be deemed a separate offense.

**Sections 109.3.2 Infraction** is hereby added as follows:

**109.3.2 Infraction.** Except as provided in Section 109.3.2, persons operating or maintaining any occupancy, premises or vehicle subject to this code that shall permit any fire or life safety hazard to exist on premises under their control shall be guilty of an infraction.

**Sections 109.3.3 Misdemeanor** is hereby added as follows:

**109.3.3 Misdemeanor.** Persons who fail to take immediate action to abate a fire or life safety hazard when ordered or notified to do so by the chief or a duly authorized representative, or who violate the following sections of this code, shall be guilty of a misdemeanor:

104.11.2 Obstructing operations

104.11.3 Systems and Devices

107.6 Overcrowding

109.2.2 Compliance with Orders and Notices

111.4 Failure to comply

305.4 Deliberate or negligent burning

308.1.2 Throwing or placing sources of ignition

310.7 Burning Objects

2404.7 Open or exposed flames

### **Section 3-3-4. Chapter 2**

**Chapter 2 Definitions** is adopted in its entirety with the following amendments:

**Sections 202 General Definitions** is hereby revised by adding "Flow-line" and "Hazardous Fire Area", and revising "High-Rise Building" as follows:

#### **202 General Definitions**

**FLOW-LINE** is the lowest continuous elevation on a rolled curb defined by the path traced by a particle in a moving body of water at the bottom of the rolled curb.

**HAZARDOUS FIRE AREA** includes all areas identified within Section 4906.2 and other areas as determined by the Fire Code Official due to the presence of combustible vegetation, or the proximity of the property to an area that contains combustible vegetation.

**HIGH-RISE BUILDING.** In other than Group I-2 occupancies "high-rise buildings" as used by this Code:

1. Existing high-rise structure" means a high-rise structure, the construction of which commenced or completed prior to July 1, 1974.



2. "High-rise structure" means every building of any type of construction or occupancy having floor used for human occupancy located more than 55 feet above the lowest floor level having building access except buildings used as hospitals as defined by the Health and Safety Code Section 1250.
3. "New high-rise structure" means a high-rise structure, the construction of which commenced on or after July 1, 1974

### **Section 3-3-5 Chapter 3**

**Chapter 3 General Precautions Against Fire** is adopted in its entirety with the following amendments:

**Section 304.1.2 (7) Vegetation** is hereby revised by adding Section "(E)" as follows:

**(E)** OCFA Vegetation Management Guideline.

**Section 305.5 Chimney spark arrestors** is hereby added as follows:**305.5**

**Chimney spark arrestors.** All chimneys attached to any appliance or fireplace that burns solid fuel shall be equipped with an approved spark arrestor, the spark arrester shall meet all of the following requirements:

1. The net free area of the spark arrester shall not be less than four times the net area of the outlet of the chimney.
2. The spark arrester screen shall have heat or corrosion resistance equivalent to 12 gage steel wire, 19 gage galvanized wire or 24 gage stainless steel.
3. Openings shall not permit the passage of spheres having a diameter larger than ½ inch and shall not block the passage of spheres having a diameter of less than 3/8 inch.



4. The spark arrester shall be accessible for cleaning and the screen or chimney cap shall be removable to allow for cleaning of the chimney flue.

**Section 308.1.4 Open-flame Cooking Devices** is hereby deleted.

**Section 318 Development On Or Near Land Containing Or Emitting Toxic, Combustible or Flammable Liquids, Gases or Vapors**, is hereby added as follows:

**318 Development On Or Near Land Containing Or Emitting Toxic, Combustible or Flammable Liquids, Gases or Vapors.** The fire code official may require the submittal for approval of geological studies, evaluations, reports, remedial recommendations and/or similar documentation from a state-licensed and department-approved individual or firm, on any parcel of land to be developed which has, or is adjacent to, or within 1,000 feet (304.8 m) of a parcel of land that has an active, inactive, or abandoned oil or gas well operation, petroleum or chemical refining facility, petroleum or chemical storage, or may contain or give off toxic, combustible or flammable liquids, gases or vapors.

**Section 319 Fuel Modification Requirements for New Construction** is hereby added as follows:

**319 Fuel Modification Requirements for New Construction.** All new buildings to be built or installed in areas containing combustible vegetation shall comply with the following:

1. Preliminary fuel modification plans shall be submitted to and approved by the fire code official concurrent with the submittal for approval of any tentative map.
2. Final fuel modification plans shall be submitted to and approved by the fire code official prior to the issuance of a grading permit.

3. The fuel modification plans shall meet the criteria set forth in the Fuel Modification Section of the Orange County Fire Authority Vegetation Managements Guideline.
4. The fuel modification plan may be altered if conditions change. Any alterations to the fuel modification areas shall have prior approval by the fire code official.
5. All elements of the fuel modification plan shall be maintained in accordance with the approved plan and are subject to the enforcement process outlined in the Fire Code.

**Section 320 Clearance of brush or vegetation growth from roadways** is hereby added as follows:

**320 Clearance of brush or vegetation growth from roadways.** The fire code official is authorized to cause areas within 10 feet (3048 mm) on each side of portions of highways and private streets which are improved, designed or ordinarily used for vehicular traffic, to be cleared of flammable vegetation and other combustible growth. Measurement shall be from the flow-line or the end of the improved edge of the roadway surfaces .

*Exception: Single specimens of trees, ornamental shrubbery or cultivated ground cover such as green grass, ivy, succulents or similar plants used as ground covers, provided that they do not form a means of readily transmitting fire.*

**Section 321 Unusual Circumstances** is hereby added as follows:

**321 Unusual circumstances.** The fire code official may suspend enforcement of the vegetation management requirements and require reasonable alternative measures

designed to advance the purpose of this code if determined that in any specific case that any of the following conditions exist:

- 1 Difficult terrain.
- 2 Danger of erosion.
- 3 Presence of plants included in any state and federal resources agencies, California Native Plant Society and county-approved list of wildlife, plants, rare, endangered and/or threatened species.
- 4 Stands or groves of trees or heritage trees.
- 5 Other unusual circumstances that make strict compliance with the clearance of vegetation provisions undesirable or impractical.

**Section 322 Use of Equipment** is hereby added as follows:

**322 Use of equipment.** Except as otherwise provided in this section, no person shall use, operate, or cause to be operated, in, upon or adjoining any hazardous fire area any internal combustion engine which uses hydrocarbon fuels, unless the engine is equipped with a spark arrester as defined in Section 322.1 maintained in effective working order, or the engine is constructed, equipped and maintained for the prevention of fire.

*Exception: Engines used to provide motor power for trucks, truck tractors, buses, and passenger vehicles, except motorcycles, are not subject to this section if the exhaust system is equipped with a muffler as defined in the Vehicle Code of the State of California.*

- 1. Turbocharged engines are not subject to this section if all exhausted gases pass through the rotating turbine wheel, there is no exhaust bypass to the atmosphere, and the turbocharger is in good mechanical condition*

**Section 322.1 Spark Arrestors** is hereby added as follows:



**322.1 Spark arrestors.** Spark arrestors shall comply with the following:

1. A spark arrester is a device constructed of nonflammable material specifically for the purpose of removing and retaining carbon and other flammable particles over 0.0232 of an inch (0.58 mm) in size from the exhaust flow of an internal combustion engine that uses hydrocarbon fuels or which is qualified and rated by the United States Forest Service.
2. Spark arresters affixed to the exhaust system of engines or vehicles subject to Section 322 shall not be placed or mounted in such a manner as to allow flames or heat from the exhaust system to ignite any flammable material.

**Section 323** Restricted Entry is hereby added as follows:

**323 Restricted Entry.** The fire code official shall determine and publicly announce when hazardous fire areas shall be closed to entry and when such areas shall again be opened to entry. Entry on and occupation of hazardous fire areas, except public roadways, inhabited areas or established trails and camp sites which have not been closed during such time when the hazardous fire area is closed to entry, is prohibited.

*Exception:*

1. *Residents and owners of private property within hazardous fire areas and their invitees and guests going to or being upon their lands.*
2. *Entry, in the course of duty, by peace or police officers, and other duly authorized public officers, members of a fire department and members of the United States Forest Service.*

**Section 324 Trespassing on posted property** is hereby added as follows:

**324 Trespassing on posted property.** When the fire code official determines that a specific area within a hazardous fire area presents an exceptional and continuing fire danger

because of the density of natural growth, difficulty of terrain, proximity to structures or accessibility to the public, such areas shall be closed until changed conditions warrant termination of closure. Such areas shall be posted as hereinafter provided.

1. Signs. Approved signs prohibiting entry by unauthorized persons and referring to applicable fire code chapters shall be placed on every closed area.
2. Trespassing. Entering and remaining within areas closed and posted is prohibited.

*Exception: Owners and occupiers of private or public property within closed and posted areas, their guests or invitees, and local, state and federal public officers and their authorized agents acting in the course of duty.*

**Section 325 Outdoor fires** is hereby added as follows:

**325 Outdoor fires.** Outdoor fires shall not be built, ignited or maintained in or upon hazardous fire areas, except by permit from the fire code official.

*Exception: Outdoor fires within habited premises or designated campsites where such fires are built in a permanent barbecue, portable barbecue, outdoor fireplace, incinerator or grill and are a minimum of 30 feet (9144 mm) from a grass, grain, brush, or forest-covered area. Permanent barbecues, portable barbecues, outdoor fireplaces or grills shall not be used for the disposal of rubbish, trash or combustible waste material.*

**Section 325.1 Outdoor fire permits** is hereby added as follows:

**325.1 Outdoor fire permits.** Outdoor fire permits shall incorporate such terms and conditions which will reasonably safeguard public safety and property. Outdoor fires shall not be built, ignited or maintained in or upon hazardous fire areas under the following conditions:

1. When predicted sustained winds exceed 20 MPH at the ground level, or a red flag condition has been declared,
2. When a person age 17 or over is not present at all times to watch and tend such fire, or
3. When a public announcement is made that open burning is prohibited.

#### **Section 3-3-6 Chapter 4**

**Chapter 4: Emergency Planning and Preparedness** adopt only the Sections listed below:

1. Section 401
2. Section 402
3. Section 403
4. Section 407

#### **Section 3-3-7 Chapter 5**

**Chapter 5 Fire Service Features** is adopted in its entirety with the following amendments

**SECTION 503.1.1 Buildings and facilities** is revised by adding exception 4 as follows:

**503.1.1 Buildings and facilities.** Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all



portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

*Exception: The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where:*

- 1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.*
- 2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.*
- 3. There are not more than two Group R-3 or Group U occupancies.*
- 4. For Group R-3 and Group U occupancies equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or 903.3.1.3 the fire apparatus access road shall comply with the requirements of this section and shall extend to within 300 feet (91 m) of the main entry door to the building.*

**SECTION 503.2.1 Dimensions** is revised as follows:

**503.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm). Street widths are to be measured from top face of curb to top face of curb, on streets with curb and gutter, and from flow-line to flow-line on streets with rolled curbs.

**SECTION 503.2.1.1 Hazardous Areas** is added as follows:

**503.2.1.1 Hazardous Areas.** In areas defined as State Responsibility Area: Very High Fire Hazard Severity Zones, and Local Responsibility Area: Very High Fire Hazard Severity Zones Area as adopted by the local agencies, the minimum fire apparatus road width shall be 28 feet (8.53 m).

*Exception: When the road serves no more than 3 dwelling units and the road does not exceed 150 feet (45.7 m) in length, the road width may be 24 feet 7.3 m).*

**SECTION 503.4 Obstruction of fire apparatus access roads** is revised as follows:

**503.4 Obstruction of fire apparatus access roads.** Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Section 503.2.1 shall be maintained at all times. Speed Bumps and speed humps, shall be approved prior to installation.

**SECTION 503.6 Security gates** is revised as follows:

**503.6 Security gates.** The installation of security gates across a fire apparatus access road shall be approved by the fire chief. Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200. Vehicle access gates or barriers shall be in accordance with the Orange County Fire Authority Guidelines "Fire Master Plan for Commercial and

Residential Development". All electrically operated vehicle access gates shall be equipped with an automatic opening device in addition to a key opening switch.

**Section 505.1 Address Identification** is revised as follows:

**505.1 Address identification.** New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum of 4 inches (101.6 mm) high with a minimum stroke width of 0.5 inch (12.7 mm) for R-3 occupancies, for all other occupancies the numbers shall be a minimum of 6 inches high with a minimum stroke width of 1 inch. Where access is by a private road and the building cannot be viewed from the *public way*, a monument, pole or other sign or means shall be used to identify the structure.

**SECTION 507.5.1 Where required** is revised as follows:

**507.5.1 Where required.** Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than allowed in APPENDIX C – FIRE HYDRANT LOCATIONS AND DISTRIBUTION from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official.

Exception:

1. *For Group R-3 and Group U occupancies equipped throughout with an approved automatic sprinkler system installed in accordance with Section*



*903.3.1.1 or 903.3.1.2, or 903.3.1.3 the distance requirement shall be not more than 600 feet (183 m).*

**Section 510.1 Emergency responder radio coverage in buildings** is revised as follows:

**510.1 Emergency responder radio coverage in buildings.** All new buildings shall have radio coverage for emergency responders in accordance with the county's digital radio ordinance. In the absence of a county ordinance, Orange County Fire Authority's Emergency Responder Digital Radio Guideline shall apply. This section shall not require improvement of the existing public safety communication systems.

*Exceptions: Where it is determined by the fire code official that the radio coverage system is not needed.*

**Section 510.2 Radio signal strength** is hereby deleted without replacement:

## **Section 3-3-8 Chapter 6**

**Chapter 6 Building Service and Systems** is adopted in its entirety with the following amendments

**Section 604.2.15.1.1 CFC Standby power loads**, is here amended as follows:

**[B] 604.2.15.1.1 Standby power loads.** The following loads are classified as standby power loads:

1. Smoke control system.
2. Fire pumps.
3. Standby power shall be provided for elevators in accordance with Section 3003 of the California Building Code.

**Section 604.2.15.2.1 CFC (Section 403.1.1 CBC) Emergency power loads**, is hereby amended by adding item 6 as follows:

**[B] 604.2.15.2.1 Emergency power loads.** The following loads are classified as emergency power loads:

1. Emergency voice/alarm communication systems.
2. Fire alarm systems.
3. Automatic fire detection systems.
4. Elevator car lighting.
5. Means of egress lighting and exit sign illumination as required by Chapter 10.
6. Ventilation and automatic fire detection equipment for smokeproof enclosures.

**Section 606.8 Refrigerant Detector** is hereby amended as follows:

**606.8 Refrigerant Detector.** Machinery rooms shall contain a refrigerant detector with an audible and visual alarm. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The alarm shall be actuated at a value not greater than the corresponding TLV-TWA values shown in the California Mechanical Code for the refrigerant classification. Detectors and alarms shall be placed in approved locations. Emergency shutoff shall also be automatically activated when the concentration of refrigerant vapor exceeds 25 percent of LFL. The detector shall transmit a signal to an approved location.

**Section 606.10.1.2 Manual Operation** is hereby amended as follows:

**606.10.2 Manual operation.** When required by the fire code official, automatic crossover valves shall be capable of manual operation. The manual valves shall be located in an approved location immediately outside of the

machinery room, in a secure metal box or equivalent and marked as Emergency Controls.

**Section 608.1 Scope** is hereby amended as follows:

**608.1 Scope.** Stationary storage battery systems having an electrolyte capacity of more than 50 gallons (189 L) for flooded lead acid, nickel cadmium (Ni-Cd) and valve-regulated lead acid (VRLA), or 1,000 pounds (454 kg) for lithium-ion and lithium metal polymer, used for facility standby power, emergency power or, uninterrupted power supplies, shall comply with this section and Table 608.1. Indoor charging of electric carts/cars with more than 50 gallons (189 L) shall comply with Section 608.10,

**Section 608.10 Indoor charging of electric carts/cars** is hereby added as follows:

**608.10 Indoor charging of electric carts/cars.** Indoor charging of electric carts/cars where the combined volume of all electric/cars battery electrolyte exceeds 50 gallons shall comply with following:

**Section 610 Photovoltaic Systems** is hereby added as follows:

**SECTION 610**

**PHOTOVOLTAIC SYSTEMS**

**Section 610.1 General** is hereby added as follows:

**610.1 Manual operation.** Photovoltaic systems shall comply with Orange County Fire Chief's Association Guideline for Fire Safety Elements of Solar Photovoltaic Systems. The provision of this section may be applied by either the fire code official or the building code official.

**Section 3-3-9 Chapter 7**



**Chapter 7 Fire-Resistive-Rated Construction** is adopted in its entirety without amendments.

**Section 3-3-10 Chapter 8**

**Chapter 8 Interior Finish, Decorative Materials and Furnishings** adopt only the Sections and Subsections listed below:

1. Section 801
2. Section 802
3. Section 803
4. Section 804
5. Subsection 806.2
6. Subsection 807.1
7. Subsection 807.1.2
8. Subsection 807.4.5.1
9. Subsection 807.4.2.4.1
10. Subsection 807.4.5
11. Subsection 807.4.2.4
12. Table 803.3

**Section 3-3-11. Chapter 9**

**Chapter 9 Fire Protection Systems** is adopted in its entirety with the following amendments:

**Section 903.2 Where required** is hereby revised as follows:

**903.2 Where required.** Approved automatic sprinkler systems in buildings and structures shall be provided when one of the following conditions exists

1. **New buildings:** Notwithstanding any applicable provisions of Sections 903.2.1 through 903.2.12, an automatic fire-extinguishing system shall also be installed in all occupancies when the total building area exceeds 5,000 square feet (465 m<sup>2</sup>) as defined in Section 202, regardless of fire areas or allowable area.  
Exception: Group R-3 occupancies. Group R-3 occupancies shall comply with Section 903.2.8.
2. **Existing Buildings:** Notwithstanding any applicable provisions of this code, an automatic sprinkler system shall be provided in an existing building when an addition occurs and when one of the following conditions exists:
  - a. When an addition is 33% or more of the existing building area, and the resulting building area exceeds 5000 square feet (465 m<sup>2</sup>) as defined in Section 202; or
  - b. When an addition exceeds 2000 square feet (186 m<sup>2</sup>) and the resulting building area exceeds 5000 square feet (465 m<sup>2</sup>) as defined in Section 202.

**Section 903.2.8 Group R** is hereby revised as follows:

**903.2.8 Group R.** An automatic sprinkler system installed in accordance with Section 902.1 shall be provided throughout all buildings with a Group R fire area as follows:

1. **New Buildings:** An automatic sprinkler system shall be installed throughout all new buildings.
2. **Existing Buildings:** All existing buildings shall be equipped with automatic fire sprinkler systems when the alteration or addition meets the following conditions:

- a. Alteration: When the area of the existing structure is greater than 5,500 square feet and the area of alteration within any two-year period exceeds 50% of area of the existing structure.

Exception: When the cost of installing an approved automatic sprinkler exceeds 5% of the cost of the alteration, with the approval of the Fire Code Official, the required automatic sprinkler system may be omitted.

- b. Addition: The addition and existing building shall be equipped with automatic sprinkler system when the total square footage of the structure, including any addition is greater than 550 square feet, is 5,500 square feet or greater.

*Exception: When the cost of installing an approved automatic sprinkler system exceeds 5% of the cost of the cost of the addition, with the approval of the Fire Code Official, the required automatic sprinkler system may be omitted.*

**Section 903.3.1.1.1 Exempt locations** is hereby amended by revising exception 4 as follows:

**Exception:**

4. When approved by the fire code official spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, and associated electrical power distribution equipment, provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by fire barriers consisting of not less than 1-hour fire barriers constructed in accordance with Section 707 or not less than



2-hour horizontal assemblies constructed in accordance with Section 712, or both.

**Section 903.4 Sprinkler system supervision and alarms** is hereby revised by modifying item 1, deleting item 3 and 5, and renumbering the Exceptions as follows:

1. Automatic sprinkler systems protecting one- and two-family dwellings.
2. Limited area systems serving fewer than 20 sprinklers.
3. Jockey pump control valves that are sealed or locked in the open position.
4. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.
5. Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.

**Section 904.3.5 Monitoring** is hereby revised as follows:

**904.3.5 Monitoring.** Where a building fire alarm or monitoring system is installed, automatic fire-extinguishing systems shall be monitored by the building fire alarm or monitoring system in accordance with NFPA 72.

**Section 905.4 Location of Class I standpipe hose connections** is hereby amended by adding items 7 and 8 as follows:

**905.4 Location of Class I standpipe hose connections.** Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required stairway, a hose connection shall be provided for each floor level above or below grade. Hose connections shall be located at an intermediate floor level landing between floors, unless otherwise approved by

the fire code official. See Section 909.20.3.2 for additional provisions in smokeproof enclosures.

2. On each side of the wall adjacent to the exit opening of a horizontal exit.

*Exception: Where floor areas adjacent to a horizontal exit are reachable from exit stairway hose connections by a nozzle attached to 100 feet (30 480 mm) of hose, as measured along the path of travel a hose connection shall not be required at the horizontal exit.*

3. In every exit passageway, at the entrance from the exit passageway to other areas of a building.

*Exception: Where floor areas adjacent to an exit passageway are reachable from exit stairway hose connections by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the entrance from the exit passageway to other areas of the building.*

4. In covered mall buildings, adjacent to each exterior public entrance to the mall and adjacent to each entrance from an exit passageway or exit corridor to the mall.
5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3 percent slope), each standpipe shall be provided with a hose connection located either on the roof or at the highest landing of a stairway with stair access to the roof. An additional hose connection shall be provided at the top of the most hydraulically remote standpipe for testing purposes.

6. Where the most remote portion of a nonsprinklered floor or story is more than 150 feet (45 720 mm) from a hose connection or the most remote portion of a sprinklered floor or story is more than 150 feet (45 720 mm) from a hose connection, the fire code official is authorized to require that additional hose connections be provided in approved locations. The distance from a hose connection shall be measured along the path of travel.
7. The centerline of the 2.5 inches (63.5 mm) outlet shall be no less than 18 inches (457.2 mm) above and no more than 24 inches above the finished floor.
8. Every new building with any horizontal dimensions greater than 300 feet (91,440 mm) shall be provided with either access doors or a 2.5 inches outlets so that all portions of the building can be reached with 150 feet (46 m)) of hose from an access door or hose outlet. Required access doors shall be located in the exterior of the building and shall be accessible without the use of a ladder. The door dimensions shall be not less than 3 feet (914 mm) in width, and not less than 6 feet 8 inches (2032 mm) in height. These doors are for fire department access only.

**Section 907.2.13 High-rise buildings** is hereby revised as follows:

**907.2.13 High-rise buildings HAVING OCCUPIED FLOORS LOCATED MORE THAN 55 FEET (16 769 mm) ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT VEHICLE ACCESS and Group I-2 occupancies having floors located more than 75 feet (22 860 mm) above the lowest level fire department vehicle access.** High-rise buildings having occupied floors located more than 55 feet (16 769 mm) above the lowest level of fire department vehicle



access and Group I-2 occupancies having floors located more than 75 feet (22 860 mm) above the lowest level fire department vehicle access shall be provided with an automatic smoke detection in accordance with Section 907.2.13.1, a fire department communication system in accordance with Section 907.2.13.2 and an emergency voice/alarm communication system in accordance with Section 907.6.2.2.

*Exceptions:*

1. *Airport traffic control towers in accordance with Section 907.2.22 and Section 412 of the California Building Code.*
2. *Open parking garages in accordance with Section 406.3 of the California Building Code.*
3. *Buildings with an occupancy in Group A-5 in accordance with Section 303.1 of the California Building Code.*
4. *Low-hazard special occupancies in accordance with Section 503.1.1 of the California Building Code.*
5. *In Group I-2 and R-2.1 occupancies, the alarm shall sound at a constantly attended location and general occupant notification shall be broadcast by the emergency voice/alarm communication system*

**Section 907.4.1 Duct smoke detectors** is hereby amended as follows:

**907.4.1 Duct smoke detectors.** Smoke detectors installed in ducts shall be listed for the air velocity, temperature and humidity present in the duct. Duct smoke detectors shall be connected to the building's fire alarm control unit when a fire alarm system is installed. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location and

shall perform the intended fire safety function in accordance with this code and the California Mechanical Code. Duct smoke detectors shall not be used as a substitute for required open area detection.

*Exception:*

1. *In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.*

**Section 907.6.2.2 Emergency voice/alarm communication system** is revised as follows.

**907.6.2.2 Emergency voice/alarm communication system.** Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler water-flow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information and directions for a general or staged evacuation in accordance with the building's plans required by Section 404. In high-rise buildings having occupied floors located more than 55 feet, and Group I-2 occupancies having floors located more than 75 feet (22 860 mm) above the lowest level fire department vehicle access, the system shall operate on a minimum of the alarming floor, the floor above and the floor below. Speakers shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. Exit stairways.
3. Each floor.
4. Areas of refuge as defined in Section 1002.1.
5. Dwelling Units in apartment houses.
6. Hotel guest rooms or suites.

*Exception: In Group I-1 and R-2.1 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.*

**Section 907.7.3.2 High-rise buildings** is revised as follows.

**907.7.3.2 High-rise buildings.** High-rise buildings having occupied floors located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access and Group I-2 occupancies having occupied floors located more than 75 feet (22 860 mm) above the lowest level fire department vehicle access, a separate zone by floor shall be provided for all of the following types of alarm-initiating devices where provided:

1. Smoke detectors.
2. Sprinkler water-flow devices.
3. Manual fire alarm boxes
4. Other approved types of automatic detection devices or suppression systems.

**Section 910.3.2.2 Sprinklered buildings** is hereby amended as follows:

**910.3.2.2 Sprinklered Buildings.** Where installed in buildings equipped with an approved automatic sprinkler system, smoke and heat vents shall be designed to operate automatically by actuation of a heat-responsive device rated at least



100° F above the operating temperature of the sprinkler, unless otherwise approved.

### **Section 3-3-12. Chapter 10**

**Chapter 10 Means of Egress** is adopted in its entirety without amendments

### **Section 3-3-13. Chapter 11**

**Chapter 11 Aviation Facilities** is adopted in its entirety with the following amendments:

**Section 1102.1 Definitions** is hereby amended by adding the following definitions:

**APPROACH-DEPARTURE PATH.** The flight path of the helicopter as it approaches or departs from the landing pad.

**EMERGENCY HELICOPTER LANDING FACILITY (EHLF).** A landing area on the roof of a high rise building that is not intended to function as a heliport or helistop but is capable of accommodating fire or medical helicopters engaged in emergency operations.

**SAFETY AREA.** A defined area surrounding the landing pad which is free of obstructions.

**TAKEOFF AND LANDING AREA.** The combination of the landing pad centered within the surrounding safety area.

**Section 1108 EHLF** is hereby amended by adding the following subsections:

#### **SECTION 1108**

#### **Emergency Helicopter Landing Facility (EHLF)**

**Section 1108.1 through 1108.1. 11** are hereby added as follows:

**1108.1 General.** Every building of any type of construction or occupancy having floors used for human occupancy located more than 75 ft above the

lowest level of the fire department vehicle access shall have a rooftop emergency helicopter landing facility (EHLF) in a location approved by the fire code official for use by fire, police, and emergency medical helicopters only.

**1108.1.1 Rooftop Landing Pad.** The landing pad shall be 50 ft. x 50 ft. or a 50 ft. diameter circle that is pitched or sloped to provide drainage away from access points and passenger holding areas at a slope of 0.5 percent to 2 percent. The landing pad surface shall be constructed of approved non-combustible, nonporous materials. It shall be capable of supporting a helicopter with a maximum gross weight of 15,000 lbs. For structural design requirements, see California Building Code.

**1108.1.2 Approach-Departure Path.** The emergency helicopter landing facility shall have two approach-departure paths separated from each other by at least 90 degrees. No objects shall penetrate above the approach-departure paths. The approach-departure path begins at the edge of the landing pad, with the same width or diameter as the landing pad and is a rising slope extending outward and upward at a ratio of eight feet horizontal distance for every one foot of vertical height.

**1108.1.3 Safety Area.** The safety area is a horizontal plane level with the landing pad surface and shall extend 25 ft in all directions from the edge of the landing pad. No objects shall penetrate above the plane of the safety area.

**1108.1.4 Safety Net.** If the rooftop landing pad is elevated more than 30 in. (2'-6") above the adjoining surfaces, a 6 ft in wide horizontal safety net capable of supporting 25 lbs/psf shall be provided around the perimeter of the landing pad. The inner edge of the safety net attached to the landing pad shall be

slightly dropped (greater than 5 in. but less than 18 in.) below the pad elevation.

The safety net shall slope upward but the outer safety net edge shall not be above the elevation of the landing pad.

**1108.1.5 Take-off and Landing Area.** The takeoff and landing area shall be free of obstructions and 100 ft x 100 ft. or 100 ft. diameter.

**1108.1.6 Wind Indicating Device.** An approved wind indicating device shall be provided but shall not extend into the safety area or the approach-departure paths.

**1108.1.7 Special Markings.** The emergency helicopter landing facility shall be marked as indicated in Figure 1108.1.7

**1108.1.8 EHLF Exits.** Two stairway exits shall be provided from the landing platform area to the roof surface. For landing areas less than 2,501 square feet in area, the second exit may be a fire escape or ladder leading to the roof surface below. The stairway from the landing facility platform to the floor below shall comply with CFC 1009.4.2 for riser height and tread depth. Handrails shall be provided, but shall not extend above the platform surface.

**1108.1.9 Standpipe systems.** The standpipe system shall be extended to the roof level on which the EHLF is located. All portions of the EHLF area shall be within 150 feet of a 2.5-inch outlet on a Class I or III standpipe.

**1108.1.10 Fire extinguishers.** A minimum of one portable fire extinguisher having a minimum 80-B:C rating shall be provided and located near the stairway or ramp to the landing pad. The fire extinguisher cabinets shall not penetrate the approach-departure paths, or the safety area. Installation, inspection, and maintenance of extinguishers shall be in accordance with the CFC, Section 906.



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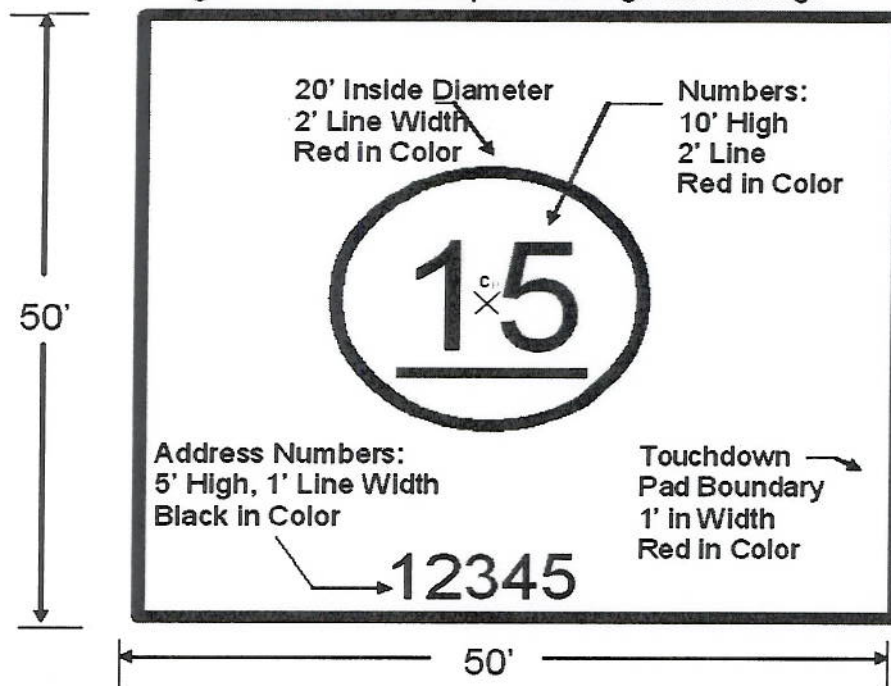
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**1108.1.11 EHLF.** Fueling, maintenance, repairs, or storage of helicopters is prohibited.

**Figure 1108.1.7 Helicopter Landing Pad Markings**



1. The preferred background is white or tan.
2. The circled, red numbers indicate the allowable weight that the facility is capable of supporting in thousands of pounds.
3. The numbers shall be oriented towards the preferred flight (typically facing the prevailing wind).

### **Section 3-3-14. Chapter 12**

**Chapter 12 Dry Cleaning** is adopted in its entirety without amendments.

### **Section 3-3-15. Chapter 13**

**Chapter 13 Combustible Dust-Producing Operations** is adopted in its entirety without amendments.

**Section 3-3-16. Chapter 14**

**Chapter 14 Fire Safety During Construction and Demolition** is adopted in its entirety without amendments.

**Section 3-3-17. Chapter 15**

**Chapter 15 Flammable Finishes** is adopted in its entirety without amendments.

**Section 3-3-18. Chapter 16**

**Chapter 16 Fruit and Crop Ripening** is adopted in its entirety without amendments.

**Section 3-3-19. Chapter 17**

**Chapter 17 Fumigation and Thermal Insecticidal Fogging** is adopted in its entirety without amendments.

**Section 3-3-20. Chapter 18**

**Chapter 18 Semiconductor Fabrication Facilities** is adopted in its entirety without amendments

**Section 3-3-21. Chapter 19**

**Chapter 19 Lumber Yards and Woodworking Facilities** is adopted in its entirety with the following amendments:

**Section 1901.2 Permit** is hereby revised by adding the following statement to the last sentence:

**1901.2 Permit.** Permits shall be required as set forth in Section 105.6. For Miscellaneous Combustible Storage Permit, see Section 105.6.29.

**Section 1908.1 General** is hereby revised as follows:

**1908.1 General.** The storage and processing of more than 400 cubic feet of wood chips, hogged materials, fines, compost, green waste, and raw product

produced from yard waste, debris and recycling facilities shall comply with Sections 1908.2 through 1908.10.

**Section 1908.2 Storage site**, is hereby revised as follows:

**1908.2 Storage site.** Storage sites shall be level and on solid ground or other all-weather surface. Sites shall be thoroughly cleaned and approval from fire code official is obtained before transferring products to the site.

**Section 1908.3 Size of piles** is hereby revised as follows:

**1908.3 Size of piles.** Piles shall not exceed 15 feet (4572 mm) in height, 50 feet (15 240 mm) in width and 100 feet (30 480 mm) in length.

**Section 1908.7 Pile fire protection** is hereby revised by adding the following statement to the last sentence:

**1908.7 Pile fire protection.** Automatic sprinkler protection shall be provided in conveyor tunnels and combustible enclosures that pass under a pile. Combustible conveyor systems and enclosed conveyor systems shall be equipped with an approved automatic sprinkler system. Oscillating sprinklers with a sufficient projectile reach are required to maintain a 40% to 60% moisture content and wet down burning/smoldering areas.

**Section 1908.9 Material-handling equipment**, is hereby revised by adding the following sentence at the beginning of the section:

**1908.9 Material-handling equipment.** All material handling equipment operated by an internal combustion engine shall be provided and maintained with an approved spark arrester. Approved material-handling equipment shall be available for moving wood chips, hogged material, wood fines and raw product during fire-fighting operations.



**Section 3-3-22. Chapter 20**

**Chapter 20 Manufacture of Organic Coatings** is adopted in its entirety without amendments.

**Section 3-3-23. Chapter 21**

**Chapter 21 Industrial Ovens** is adopted in its entirety without amendments.

**Section 3-3-24. Chapter 22**

**Chapter 22 Motor Fuel-Dispensing Facilities and Repair Garages** is adopted in its entirety without amendments.

**Section 3-3-25. Chapter 23**

**Chapter 23 High-Piled Combustible Storage** shall be adopted in its entirety with the following amendments.

**Section 2308.3 Flue spaces** is hereby amended by adding the following statement to the last sentence:

**2308.3 Flue spaces.** Flue spaces shall be provided in accordance with Table 2308.3. Required flue spaces shall be maintained. In double-row racks a pallet/commodity stop shall be provided along the longitudinal flue space at each level. The stop shall be steel or other ferrous material ¼ inch thick and in the mounted position shall extend a minimum of 4 inches above the shelf or cross member, or other method approved by fire code official. In double row racks and where products are hand-stacked chain link shall be securely attached to the rear of both racks. Chain link shall be a minimum of 12 gauge. Attachment method shall be in compliance with Figure 2308.3 or other methods as approved by the fire code official.

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**Table 2308.3** Required Flue Spaces for Rack Storage is hereby revised as follows:

**Table 2308.3 Required Flue Spaces for Rack Storage**

Rack Configuration	Fire Sprinkler		Sprinklers at the Ceiling with or Without Minimum In-Rack Sprinklers			In-Rack Sprinklers at Every Tier	No-Sprinklered
			≤25 Feet		25 Feet	Any Height	Any Height
			Option 1	Option 2			
Single Row Rack	Transverse Flue Space	Size <sup>a</sup>	3 Inch	NA	3 Inch	NR	NR
		Vertically Aligned	NR	NA	Yes	NA	
	Longitudinal Flue Space		NR	NA	NR	NR	
Double Rack Row	Transverse Flue Space	Size <sup>a</sup>	6 Inch <sup>b,c</sup>	3 Inch	3 Inch	NR	
		Vertically Aligned	NR	NR	Yes	NA	
	Longitudinal Flue Space		NR	6 Inch	6 Inch	NR	
Multi-row Rack	Transverse Flue Space	Size <sup>a</sup>	6 Inch <sup>c</sup>	NA	6 Inch	NR	
		Vertically Aligned	NR	NA	Yes	NA	
	Longitudinal Flue Space		NR	NA	NR	NR	

NR = "not required." NA means "not applicable."

<sup>a</sup> Three-inch transverse flue spaces shall be provided at least every 10 feet where ESFR sprinkler protection is provided.

<sup>b</sup> Random variations are allowed, provided that the configuration does not obstruct water penetration.

<sup>c</sup> Transverse flue space shall be maintained by mechanical means as approved.<sup>///</sup>

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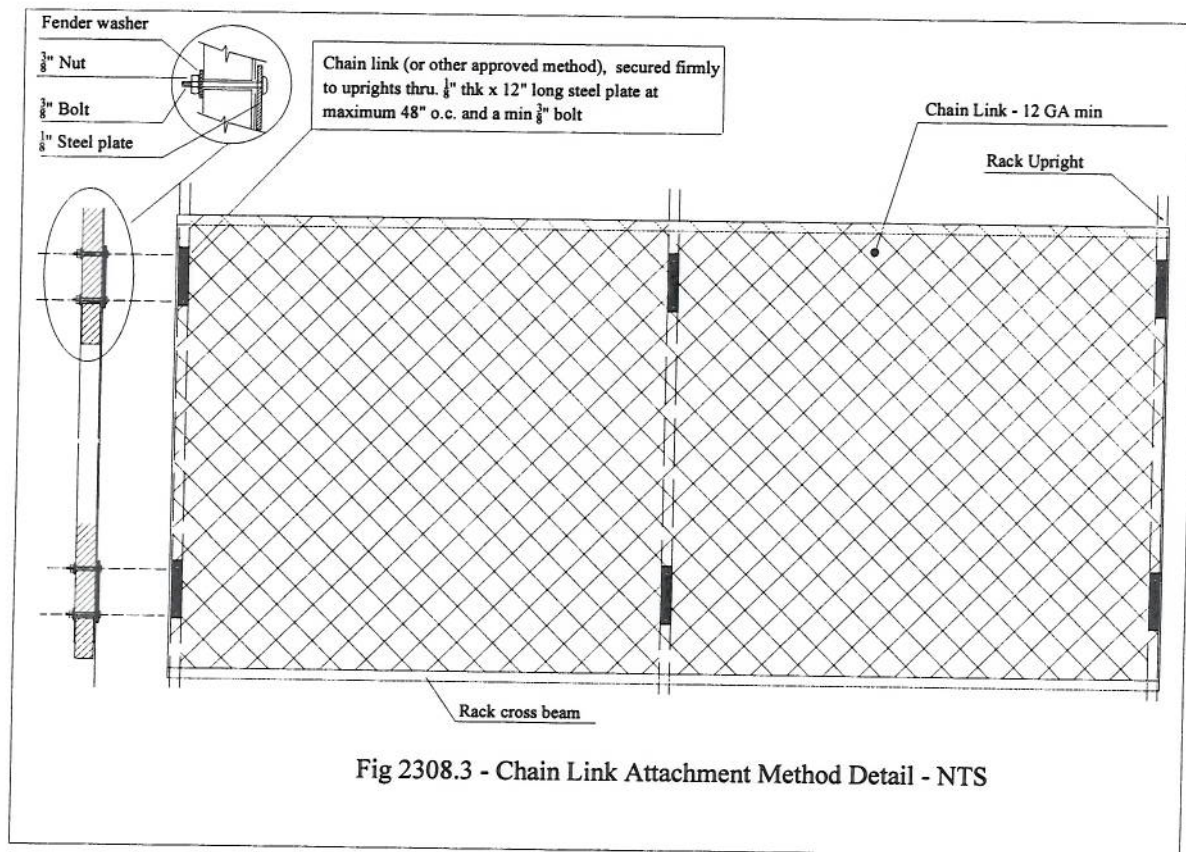


Fig 2308.3 - Chain Link Attachment Method Detail - NTS

### Section 3-3-26. Chapter 24

**Chapter 24 Tents, Canopies, and Other Membrane Structures** is adopted in its entirety without amendments.

### Section 3-3-27. Chapter 25

**Chapter 25 Tire Rebuilding & Tire Storage** is adopted in its entirety without amendments.

### Section 3-3-28. Chapter 26



**Chapter 26 Welding and Other Hot Works** is adopted in its entirety without amendments.

**Section 3-3-29. Chapter 27**

**Chapter 27 Hazardous Materials – General Provisions** is adopted in its entirety with the following amendments.

**Section 2701.5.2 Hazardous Materials Inventory Statement (HMIS)**, is hereby amended by modifying the starting paragraph as follows:

**2701.5.2 Hazardous Materials Inventory Statement (HMIS).** When required by the *fire code official*, an application for a permit shall include Orange County Fire Authority's Chemical Classification Packet which shall be completed and approved prior to approval of plans, and/or the storage, use or handling of chemicals on the premises. The HMIS shall include the following information:

1. Product Name
2. Component
3. Chemical Abstract Service (CAS) number
4. Location where stored or used.
5. Container size
6. Hazard classification
7. Amount in storage
8. Amount in use-*closed* systems
9. Amount in use-*open* systems.

**Table 2703.1.1(1) Maximum Allowable Quantity per Control Area** is hereby amended by deleting Footnote K without replacement as follows:

**Section 2703.1.1.1 Extremely Hazardous Substances** is hereby added as follows:

**2703.1.1.1 Extremely Hazardous Substances.** No person shall use or store any amount of extremely hazardous substances (EHS) in excess of the disclosable amounts (see Health and Safety Code Section 25500 et al) in a residential zoned or any residentially developed property.

**Section 2703.5 Hazard identification signs** is hereby amended by modifying the NFPA standard as follows:

**2703.5 Hazard identification signs.** Unless otherwise exempted by the fire code official, visible hazard identification signs as specified in the Orange County Fire Authority Signage Guidelines for the specific material contained shall be placed on stationary containers and above-ground tanks and at entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities requiring a permit and at specific entrances and locations designated by the fire code official.

**Section 3-3-30. Chapter 28**

**Chapter 28 Aerosols** is adopted in its entirety without amendments.

**Section 3-3-31. Chapter 29**

**Chapter 29 Combustible Fibers** is adopted in its entirety without amendments.

**Section 3-3-32. Chapter 30**

**Chapter 30 Compressed Gases** is adopted in its entirety without amendments.

**Section 3-3-33. Chapter 31**

**Chapter 21 Corrosive materials** is adopted in its entirety without amendments.

**Section 3-3-34. Chapter 32**

**Chapter 32 Cryogenic Fluids** is adopted in its entirety with the following amendment.

**Section 3203.4.1 Identification signs** is hereby revised as follows:

**3203.4.1 Identification signs.** Visible hazard identification signs in accordance with the Orange County Fire Authority Signage Guidelines shall be provided at entrances to buildings or areas in which cryogenic fluids are stored, handled or used.

### **Section 3-3-35. Chapter 33**

**Chapter 33 Explosives and Fireworks** California Fire Code Chapter 33 is adopted in its entirety with the following amendments

**Section 3301.2 Retail Fireworks** is hereby added as follows:

**33101.2 Retail Fireworks.** The storage, use, sale, possession, and handling of fireworks 1.4G (commonly referred to as Safe & Sane) and fireworks 1.3G is prohibited.

**Exception –** Fireworks 1.4G and fireworks 1.3G may be part of an electrically fired public display when permitted and conducted by a licensed pyrotechnic operator

**Section 3301.3 Seizure of Fireworks** is hereby added as follows:

**3301.3 Seizure of Fireworks.** The fire code official shall have the authority to seize, take, remove all fireworks stored, sold, offered for sale, used or handled in violation of the provisions of Title 19 CCR, Chapter 6. Any seizure or removal pursuant to this section shall be in compliance with all applicable statutory, constitutional, and decisional law.

**Section 3308.1 General** is hereby revised as follows:

**3308.1 GENERAL.** Outdoor fireworks displays, use of pyrotechnics before proximity audience and pyrotechnic special effects in theatrical, and group entertainment productions, shall comply with California Code of Regulations, Title 19 , Division 1, Chapter 6 – Fireworks, the Orange County Fire Authority



Guidelines for Public Fireworks Displays, and with the conditions of the permit as approved by the fire code official.

**Section 3308.2 Firing** is hereby added as follows:

**3308.2 Firing.** All fireworks displays shall be electrically fired.

#### **Section 3-3-36. Chapter 34**

**Chapter 34 Flammable and Combustible Liquids** is adopted in its entirety with the following amendment.

**Section 3404.2.3.2 Label or placard** is hereby amended by modifying the NFPA standard as follows:

**3404.2.3.2 Label or placard.** Tanks more than 100 gallons (379 L) in capacity, which are permanently installed or mounted and used for the storage of Class I, II or III liquids, shall bear a label and placard identifying the material therein. Placards shall be in accordance with the Orange County Fire Authority Signage Guidelines.

#### **Section 3-3-37. Chapter 35**

**Chapter 35 Flammable Gases** is adopted in its entirety without amendments.

#### **Section 3-3-38. Chapter 36**

**Chapter 36 Flammable Solids** is adopted in its entirety without amendments.

#### **Section 3-3-39. Chapter 37**

**Chapter 37 Highly Toxic and Toxic Materials** is adopted in its entirety with the following amendments.

**Section 3704.2.2.7 Treatment system** is hereby amending the exception as follows:

Exception:

*1. Toxic gases – storage/use. Treatment systems are not required for toxic gases supplied by cylinders or portable tanks not exceeding 1,700 pounds (772 Kg) water capacity when the following are provided:*

*1.1 A listed or approved gas detection system with a sensing interval not exceeding 5 minutes.*

*1.2 For storage, valve outlets are equipped with gas-tight outlet plugs or caps.*

*1.3 For use, an approved listed or approved automatic-closing fail-safe valve located immediately adjacent to cylinder valves. The fail-safe valve shall close when gas is detected at the permissible exposure limit (PEL) by a gas detection system monitoring the exhaust system at the point of discharge from the gas cabinet, exhausted enclosure, ventilated enclosure or gas room. The gas detection system shall comply with Section 3704.2.2.10.*

#### **Section 3-3-40. Chapter 38**

**Chapter 38 Liquefied Petroleum Gases** is adopted in its entirety without amendments.

#### **Section 3-3-41. Chapter 39**

**Chapter 39 Organic Peroxides** is adopted in its entirety without amendments.

#### **Section 3-3-42. Chapter 40**

**Chapter 40 Oxidizers** is adopted in its entirety without amendments.

#### **Section 3-3-43. Chapter 41**

**Chapter 41 Pyrophoric Materials** is adopted in its entirety without amendments.

#### **Section 3-3-44. Chapter 42**

**Chapter 42 Pyroxylin Plastics** is adopted in its entirety without amendments.

#### **Section 3-3-45. Chapter 43**

**Chapter 43 Unstable (Reactive) Materials** is adopted in its entirety without amendments.

**Section 3-3-46. Chapter 44**

**Chapter 44 Water-Reactive Solids and Liquids** is adopted in its entirety without amendments.

**Section 3-3-47. Chapter 45**

**Chapter 45** Marinas is adopted in its entirety with the following amendments.

**Section 4503.7 Slip Identification** is revised as follows:

**Section 4503.7 Slip identification.** Slips and mooring spaces shall be individually identified by an approved numeric or alphabetic designator. Space designators shall be posted at the space. Signs indicating the space designators located on finger piers and floats shall be posted at the base of all piers, finger piers, floats and finger floats. A monument sign shall be installed at each gate designating slip and mooring spaces in contrasting colors.

**Section 4504.2 Standpipes** is hereby revised by adding section 4504.2.2 as follows:

**4504.2.2** All standpipes exposed to the outside elements shall be painted for corrosion protection.

Exception: Stainless Steel (316 Grade) Standpipes

**Section 3-3-48. Chapter 46**

**Chapter 46 Construction Requirements for Existing Buildings** is adopted by only those Sections and Subsections listed below:

- 1. Section 4606**
- 2. Subsection 4603.6**
- 3. Subsection 4603.6.3**



**4. Subsection 4603.6.3.1**

**5. Subsection 4603.6.8 through 4603.6.8.2**

**6. Subsection 4603.6.9 through 4603.6.9.10**

**7. Subsection 4603.7 through 4603.7.5.3**

**Section 3-3-49. Chapter 47**

**Chapter 47 Referenced Standards** is adopted in its entirety with the following amendments to the National Fire Protection Association Standards:

**NFPA 13, 2010 Edition, Installation of Sprinkler Systems** is hereby amended as follows:

**Section 6.8.3 is hereby revised as follows:**

**6.8.3** Fire department connections (FDC) shall be of an approved type. The FDC shall contain a minimum of two 2 ½" inlets. The location shall be approved and be no more than 150 feet from a public hydrant. The size of piping and the number of inlets shall be approved by the chief. If acceptable to the water authority, it may be installed on the backflow assembly. Fire department inlet connections shall be painted OSHA safety red. When the fire sprinkler density design requires 500 gpm (including inside hose stream demand) or greater, or a standpipe system is included, four 2 ½" inlets shall be provided. FDC may be located within 150 feet of a private fire hydrant when approved by the chief.

**Section 8.3.3.1 is hereby revised as follows:**

**8.3.3.1.** When fire sprinkler systems are installed in shell buildings of undetermined use (Spec Buildings) other than warehouses (S occupancies), fire sprinklers of the quick-response type shall be used. Use is considered undetermined if a specific tenant/occupant is not identified at the time the permit is issued. Sprinklers in light hazard occupancies shall be one of the following:

1. Quick-response type as defined in 3.6.4.7
2. Residential sprinklers in accordance with the requirements of 8.4.5
3. Standard-response sprinklers used for modifications or additions to existing light hazard systems equipped with standard-response sprinklers
4. Standard-response sprinklers used where individual standard-response sprinklers are replaced in existing light hazard systems

**Section 8.17.1.1.1 is hereby added as follows**

**8.17.1.1.1 Residential Waterflow Alarms.** A local water-flow alarms shall be provided on all sprinkler systems and shall be connected to the building fire alarm or water-flow monitoring system where provided. Group R occupancies not requiring a fire alarm system by the California Fire Code shall be provided with a minimum of one approved interior alarm device in each unit. Sound levels in all sleeping areas shall be a minimum of 15 DBA above the average ambient sound or a minimum of 75 DBA with all intervening doors closed. Alarms shall be audible within all other living areas within each dwelling unit. When not connected to a fire alarm or water-flow monitoring system, audible devices shall be powered from an uninterruptible circuit (except for over-current protection) serving normally operated appliances in the residence.

**Section 8.17.2.4.6 is hereby revised as follows:**

**8.17.2.4.6** Fire department connections shall be on the street side of buildings and shall be located and arranged so that they are immediately adjacent to the approved fire department access road and that hose lines can be readily and conveniently attached to the inlets without interference from nearby objects including buildings, fence, posts, or other fire department connections.

**Section 11.1.1.2** is hereby added as follows:

**11.1.1.2** When fire sprinkler systems are required in buildings of undetermined use other than warehouses, they shall be designed and installed to have a fire sprinkler density of not less than that required for an Ordinary Hazard Group 2 use, with no reduction/s in density or design area. Warehouse fire sprinkler systems shall be designed to Figure 16.2.1.3.2 (d) curve "G". Use is considered undetermined if a specific tenant/occupant is not identified at the time the permit is issued. Where a subsequent occupancy requires a system with greater capability, it shall be the responsibility of the occupant to upgrade the system to the required density for the new occupancy.

**Section 11.2.3.1.1.1** is hereby added as follows:

**11.2.3.1.1.1** The available water supply for fire sprinkler system design shall be determined by one of the following methods, as approved by the Fire Code Official:

- 1) Subtract the project site elevation from the low water level for the appropriate pressure zone and multiplying the result by 0.433;
- 2) Use a maximum of 40 psi, if available;
- 3) Utilize the Orange County Fire Authority water-flow test form/directions to document a flow test conducted by the local water agency or a professional engineer licensed in the State of California. The result shall be adjusted in accordance with the graduated scaled found in the guideline.

**Section 22.1.3 (43)** is hereby revised as follows:

**Section 22.1.3 (43)** Size and location of hydrants, showing size and number of outlets and if outlets are to be equipped with independent gate valves. Whether hose houses and equipment are to be provided, and by whom, shall be



indicated. Static and residual hydrants that were used in the flow tests shall be shown. Flow test shall be completed within six months of the plan submittal to the authority having jurisdiction.

**NFPA 13R 2010 Edition Installation of Sprinkler System in Residential Occupancies up to and Including Four Stories in Height** is hereby amended as follows:

**Section 6.16.1** is hereby revised as follows:

**6.16.1** A local water-flow alarms shall be provided on all sprinkler systems and shall be connected to the building fire alarm or water-flow monitoring system where provided. Group R occupancies containing less than the number of stories, dwelling units or occupant load specified in Section 907.2.8 of the 2010 California Fire Code as requiring a fire alarm system shall be provided with a minimum of one approved interior alarm device in each unit. Sound levels in all sleeping areas shall be a minimum of 15 dBA above the average ambient sound or a minimum of 75 dBA with all intervening doors closed. Alarms shall be audible within all other living areas within each dwelling unit. When not connected to a fire alarm or water-flow monitoring system, audible devices shall be powered from an uninterruptible circuit (except for over-current protection) serving normally operated appliances in the residence.

There shall also be a minimum of one exterior alarm indicating device, listed for outside service and audible from the access roadway that serves that building.

**Section 6.6.6** is hereby revised as follows:

**Section 6.6.6** Sprinklers shall not be required in penthouse equipment rooms, elevator machine rooms, concealed spaces dedicated exclusively to containing only dwelling unit ventilation equipment, crawl spaces, floor/ceiling spaces, noncombustible elevator shafts where the elevator cars comply with ANSI A17.1, Safety Code for Elevators and Escalators, and other concealed spaces that are not used or intended for living purposes or storage and do not contain fuel fired equipment.

**Section 6.6.9** is hereby added as follows:

**6.6.9** Sprinklers shall not be required in attics that are not located over dwelling units. When attics are separated by unit, each unit's attic space may be protected per NFPA 13D Section 8.6.4.2. All other attics shall be protected per NFPA 13.

**NFPA 13D 2010 Edition Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes** is hereby amended as follows:

**Section 4.1.5** is hereby added as follows:

**4.1.5 Stock of Spare Sprinklers**

**Section 4.1.5.1** is hereby added as follows:

**4.1.5.1.** A supply of at least two sprinklers for each type shall be maintained on the premises so that any sprinklers that have operated or been damaged in any way can be promptly replaced.

**Section 4.1.5.2** is hereby added as follows:

**4.1.5.2** The sprinklers shall correspond to the types and temperature ratings of the sprinklers in the property.

**Section 4.1.5.3** is hereby added as follows:

**4.1.5.3** The sprinklers shall be kept in a cabinet located where the temperature to which they are subjected will at no time exceed 100 °F (38°C).

**Section 4.1.5.4** is hereby added as follows:

**4.1.5.4** A special sprinkler wrench shall be provided and kept in the cabinet to be used in the removal and installation of sprinklers. One sprinkler wrench shall be provided for each type of sprinkler installed.

**Section 7.1.2** is hereby revised as follows:

**7.1.2** The system piping shall not have a separate control valve unless supervised by a central station, proprietary or remote station alarm service.

**Section 7.3.1** is hereby deleted in its entirety and replaced as follows:

**7.3.1** At least one water pressure gauge shall be installed on the riser assembly.

**Section 7.6** is hereby deleted in its entirety and replaced as follows:

**7.6 Alarms** Exterior alarm indicating device shall be listed for outside service and audible from the street from which the house is addressed. Exterior audible devices shall be placed on the front or side of the structure and the location subject to final approval by the fire code official. Additional interior alarm devices shall be required to provide audibility throughout the structure. Sound levels in all sleeping areas with all intervening doors closed shall be a minimum



of 15 dBA above the average ambient sound level but not less than 75 dBA.

Audible devices shall be powered from an uninterruptible circuit (except for over-current protection) serving normally operated appliances in the residence.

Exception:

1. When an approved water flow monitoring system is installed, interior audible devices may be powered through the fire alarm control panel.
2. When smoke detectors specified under CBC Section 310.9 are used to sound an alarm upon waterflow switch activation.

**Section 8.6.4.2** is hereby added as follows:

**8.6.4.2** All attics shall be protected with an intermediate temperature quick response sprinkler which shall be located to protect attic penetrations created by the access scuttles or mechanical equipment

**NFPA 14, 2007 Edition, Installation of Standpipe and Hose Systems** is hereby amended as follows:

**Section 6.4.5.4.1** is hereby deleted in its entirety and replaced as follows:

**6.4.5.4.1** The fire department connection shall have a minimum of two 2 ½ inches, internal threaded (NHS) inlets. Additional inlets shall be provided on a 250 GPM per inlet ratio to meet the system demand. The inlets shall be provided with approved caps to protect the system from entry of debris. The location of the FDC shall be approved and be no more than 150 feet from a public hydrant. If acceptable to the water authority, it may be installed on the backflow assembly. Fire department inlet connections shall be painted OSHA safety red.

**Section 7.3.1.1** is hereby is deleted in its entirety and replaced as follows:

**7.3.1.1 Hose Connection Height** Class I and III Standpipe hose connections shall be unobstructed and shall be located not less than 18 inches, or more than 24 inches above the finished floor. Class II Standpipe hose connections shall be unobstructed and shall be located not less than 3 feet or more than 5 feet above the finished floor.

**NFPA 24, 2010 Edition, Installation of Private Fire Service Mains and Their**

**Appurtenances** is hereby amended as follows:

**Section 5.9.1.3** is hereby revised as follows:

**5.9.1.3** The fire department connection shall be of an approved type and contain a minimum of two 2 ½ inch inlets. The location shall be approved and be no more than 150 feet from a public fire hydrant. If acceptable to the water authority, it may be installed on the backflow assembly. The supply pipe shall be painted OSHA safety red.

**Section 5.9.1.3.1** is hereby added as follows:

**5.9.1.3.1** When the sprinkler density design is 500 gpm (including the interior hose stream demand) or greater, or a standpipe system is included, four 2 ½" inlets shall be provided.

**Section 5.9.1.3.2** is hereby added as follows:

**5.9.1.3.2** The fire department connection (FDC) may be located within 150 feet of a private fire hydrant provided the FDC connects down-stream of an aboveground sprinkler system check valve.

**Section 6.2.1.1** is hereby added as follows:

**6.2.1.1** The closest upstream indicating valve to the riser shall be painted OSHA red.

**Section 6.2.11 (5)** is hereby deleted without replacement:

**Section 6.2.11 (6)** is hereby revised as follows:

**6.2.11 (5)** Control valves in a one-hour fire-rated room accessible from the exterior

**Section 6.2.11 (7)** is hereby deleted without replacement:

**Section 6.3.3** is hereby added as follows:

**Section 6.3.3** All post indicator valves controlling fire suppression water supplies shall be painted OSHA red.

**Section 10.1.6.3** is hereby added as follows:

**10.1.6.3** All ferrous pipe shall be coated and wrapped. Joints shall be coated and wrapped after assembly. All fittings shall be protected with a loose 8-mil polyethylene tube. The ends of the tube shall extend past the joint by a minimum of 12 inches and be sealed with 2 inch wide tape approved for underground use. Galvanizing does not meet the requirements of this section.

*Exception: 316 Stainless Steel pipe and fittings*

**Section 10.3.5.2** is hereby revised as follows:

**10.3.5.2** All bolted joint accessories shall be cleaned and thoroughly coated with asphalt or other corrosion-retarding material, prior to poly-tube, and after installation.

**Section 10.3.5.3** is hereby added as follows:

**10.3.5.3** All bolts used in pipe-joint assembly shall be 316 stainless steel.

**Section 10.6.3.1** is hereby revised as follows:

**10.6.3.1** Where fire service mains enter the building adjacent to the foundation, the pipe may run under a building to a maximum of 18 inches, as measured from



the interior of the exterior wall. The pipe under the building or building foundation shall be 316 stainless steel and shall not contain mechanical joints or comply with 10.6.2.

**Section 10.6.5** is hereby revised as follows:

**10.6.5** Pipe Joints shall not be located under foundation footings. The pipe under the building or building foundation shall be 316 stainless steel and shall not contain mechanical joints.

## **NFPA 72, 2010 Edition National Fire Alarm Code**

**Section 14.2.1.2.3** is hereby revised as follows:

**14.2.1.2.3** If a defect or malfunction is not corrected at the conclusion of system inspection, testing, or maintenance, the system owner or the owner' designated representative and fire code official shall be informed of the impairment in writing within 24 hours.

**Section 23.8.2** Fire Alarm Control Units is revised as follows:

**23.8.2.2** Except as permitted in 23.8.2.3, the fire alarm systems components shall be permitted to share control equipment or shall be able to operate as stand-alone subsystems, but in any case, they shall be arranged to function as a single system and send a single signal to a central, remote, or proprietary station.

**Section 23.8.2.3** is hereby deleted without replacement:

**Section 26.2.3.1** is hereby amended by modifying the start paragraph as follows:

**26.2.3.1** Supervising station customers or clients and the fire code official shall be notified in writing within 7 days of any scheduled change in service

that results in signals from their property being handled by a different supervising station facility.

**Section 3-3-50. Chapter 48**

**Chapter 48 Motion Picture and Television Production Studio Sound Stages, Approved Production Facilities, and Production Locations** is adopted in its entirety without amendments.

**Section 3-3-51. Chapter 49**

**Chapter 49 Requirements for Wildland-Urban Interface Fire Areas** is adopted in its entirety with the following amendments:

**Section 4906.3 Vegetation** is hereby revised by adding Section "(5)" as follows:

**(5)** OCFA Vegetation Management Guideline.

**Section 4908 Fuel Modification Requirements for New Construction** is hereby added as follows:

**4908 Fuel Modification Requirements for New Construction.** All new buildings to be built or installed in hazardous fire areas shall comply with the following:

1. Preliminary fuel modification plans shall be submitted to and approved by the fire code official concurrent with the submittal for approval of any tentative map.
2. Final fuel modification plans shall be submitted to and approved by the fire code official prior to the issuance of a grading permit.
3. The fuel modification plans shall meet the criteria set forth in the Fuel Modification Section of the Orange County Fire Authority Vegetation Management Guidelines.
4. The fuel modification plan may be altered if conditions change. Any alterations to the fuel modification areas shall have prior approved by the fire code official.

5. All elements of the fuel modification plan shall be maintained in accordance with the approved plan and are subject to the enforcement process outlined in the Fire Code.

**Section 4909 Explosives and Blasting** is hereby added as follows:

**4909 Explosives and Blasting.** Explosives shall not be possessed, kept, stored, sold, offered for sale, given away, used, discharged, transported or disposed of within wildland-urban interface areas, or hazardous fire areas except by permit from the fire code official.

### **Section 3-3-52. Appendix B**

**Appendix B** is adopted in its entirety with the following amendment:

**Section B105.1 One- and two-family dwellings** is hereby added as follows:

**B105.1 One- and two-family dwellings.** The minimum fire-flow and flow duration requirements for one- and two-family dwellings having a fire-flow calculation area that does not exceed 3,600 square feet (344.5m<sup>2</sup>) shall be 1,000 gallons per minute (3785.4 L/min) for 1 hour. Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5m<sup>2</sup>) shall not be less than that specified in Table B105.1.

*Exception: When the building is equipped with an approved automatic sprinkler system, the fire flow requirements of Table B105.1 are reduced by 50%, provided that the resulting fire flow is not less than 1,000 gallons per minute (3785.4 L/min) for 1 hour.*

### **Section 3-3-53. Appendix BB**

**Appendix BB** is adopted in its entirety without amendments:

### **Section 3-3-54. Appendix C**

**Appendix C** is adopted in its entirety without amendments;

**Section 3-3-55. Appendix CC**

**Appendix CC** is adopted in its entirety without amendment



This ordinance shall take effect and be in full force thirty (30) days from and after its passage and before the expiration of fifteen (15) days after the passage thereof, shall be published once in an adjudicated newspaper in the County of Orange.

**THE FOREGOING** was **PASSED** and **ADOPTED** by the following vote of the Orange County Board of Supervisors on January 25, 2011, to wit:

AYES: Supervisors: PATRICIA BATES, JANET NGUYEN, JOHN M. W. MOORLACH  
SHAWN NELSON, BILL CAMPBELL

NOES:

EXCUSED:

ABSTAINED:

*Bill Campbell*

CHAIRMAN

STATE OF CALIFORNIA     )  
                                      ) ss:  
COUNTY OF ORANGE     )

I, DARLENE J. BLOOM, Clerk of the Board of Orange County, California, hereby certify that a copy of this document has been delivered to the Chairman of the Board and that the above and foregoing Ordinance was duly and regularly adopted by the Orange County Board of Supervisors.

IN WITNESS WHEREOF, I have hereto set my hand and seal.

*Darlene J. Bloom*  
DARLENE J. BLOOM  
Clerk of the Board.  
County of Orange, State of California



Ordinance No.: 11-005  
Agenda Date: 01/25/2011  
Item No.: 48



I certify that the foregoing is a true and correct copy of the Ordinance adopted by the Board of Supervisors, Orange County, State of California

DARLENE J. BLOOM, Clerk of the Board of Supervisors

By: \_\_\_\_\_  
Deputy